TSMC-02-1079

2002.10

U.S. Patent 6,465,372 to Xia et al., "Surface Treatment of C-Doped SiO2, Film to Enhance Film Stability During O2 Ashing," discusses methods for densifying low k dielectric layers including a plasma treatment with N2 and He.

2002.06

U.S. Patent 6,403,464 to Chang, "Method to Reduce the Moisture Content in an Organic Low Dielectric Constant Material," provides a method for removing moisture from a low k dielectric layer and is a high density nitrogen plasma treatment at a temperature of from 350 to 450 degrees C.

2000 . 02

U.S. Patent 6,028,015 to Wang et al., "Process for Treating Damaged Surfaces of Low Dielectric Constant Organo Silicon Oxide Insulation Material to Inhibit Moisture Absorption," discloses a stabilization approach which treats a low k dielectric layer with H2 plasma.

2002.08

U.S. Patent 6,436,808 to Ngo et al., "NH3/N2-Plasma

Treatment to Prevent Organic ILD Degradation," employs a NH3/H2

plasma treatment of an ILD layer such as SiCOH that is repeated
one or more times during a damascene process.

2000.08

U.S. Patent 6,103,601 to Lee et al., "Method and Apparatus for Improving Film Stability of Halogen-Doped Silicon Oxide Films," discusses a fluorine doped SiO2 layer treated with hydrogen plasma.

74.00

/MA